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Six Sigma seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimizing variability in manufacturing and business processes. It uses a set of quality management methods, including statistical methods, and creates a special infrastructure of people within the organization ("Black Belts", "Green Belts", etc.) who are experts in these methods. Each Six Sigma project carried out within an organization follows a defined sequence of steps and has quantified financial targets (cost reduction or profit increase).

CERTIFICATION

Six Sigma certification for both Green and Black Belts is offered by the London Academy of Management studies.

Six Sigma originated as a set of practices designed to improve manufacturing processes and eliminate defects, but its application was subsequently extended to other types of business processes as well. In Six Sigma, a defect is defined as any process output that does not meet customer specifications, or that could lead to creating an output that does not meet customer specifications

Features that set Six Sigma apart from previous quality improvement initiatives include:

- ✍ A clear focus on achieving measurable and quantifiable financial returns from any Six Sigma project.
- ✍ An increased emphasis on strong and passionate management leadership and support.
- ✍ A special infrastructure of "Champions," "Master Black Belts," "Black Belts," "Green Belts", etc. to lead and implement the Six Sigma approach.
- ✍ A clear commitment to making decisions on the basis of verifiable data, rather than assumptions and guesswork.

SIX SIGMA – GREEN BELTS

COURSE CONTENTS

1. Why Six Sigma?

- Definition and Graphical View of Six Sigma
- Origins and Success Stories
- Comparisons Between Typical TQM and Six Sigma Programs

2. How to Deploy Six Sigma

- Leadership Responsibilities
- Resource Allocation
- Organizational Metrics and Dashboards
- Description of the Roles and Responsibilities
- Data-driven Decision Making

3. DEFINE: Project Definition

- Tasks
- Pareto Diagrams
- Matrix Diagrams
- Reporting
- Work Breakdown Structure
- Process Maps
- Project Charters

4.. DEFINE: Project Scheduling

- Activity Network Diagram

5. DEFINE: Change Management/Teams

- Stages of Team Development
- Prioritization Matrix
- Overcoming Problems

6. MEASURE: Tools and Objectives

- Measure Stage Objectives
- Process Maps
- Flowcharts

7. ANALYZE: Introduction to Regression Analysis

- Overview of Multiple Regression Tools

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SIX SIGMA – BLACK BELTS COURSE CONTENTS

1. Why Do Six Sigma

- Definition and Graphical View of Six Sigma
- Example Sigma Levels
- Comparisons Between Typical TQM and Six Sigma Programs
- Origins and Success Stories
- Overview of Business Applications
- Introduction to DPMO and Cost as Metrics

2. Six Sigma Projects

- Project Focus
- Overview of DMAIC Methodology
- Selecting Projects
- Project Reporting

3. Incorporating Voice of the Customer

- Goal Posts vs. Kano
- Overview of QFD
- Big Y's, Little Y's
- Customer Focus and the Leadership Role
- Customer Data

4. DEFINE: Project Definition

- Tasks
- Pareto Diagrams
- Reporting
- Work Breakdown Structure
- Process Maps

5. DEFINE: Project Financials

- Quality Cost Classifications
- Calculations
- Quantifying Project Benefits

6. DEFINE: Goals and Metrics

- Measurement & Feedback
- Calculating Sigma Levels

7. DEFINE: Project Scheduling

- Activity Network Diagram
- PERT Analysis

8. DEFINE: Change Management/Teams

- Problems With Change
- Team Formation, Rules, and Responsibilities
- Achieving Buy-in

9. MEASURE: Tools

- Measure Stage Objectives
- Process Maps
- Flowcharts
- Cause and Effect Diagrams

10. MEASURE: Establishing Process Baseline

- Process Variation
- Requirements vs. Control
- Benefits of Control Charts
- Control Chart Interpretation

11. MEASURE: Individuals Data

- Construction and Calculations
- Sampling Considerations
- Assumptions
- Interpretation

12. MEASURE: Process Capability

- Probability Plots
- Capability and Performance Indices

13. MEASURE: Measurement Systems Analysis

- Stability Studies
- R&R Analysis
- Linearity Analysis

14. ANALYZE: Lean Thinking

- Definition of Waste
- ANALYZE: Sources of Variation
- IMPROVE: Simulations
- CONTROL: Tools
- Analyzing Process
- ANALYZE: Design Selection
- IMPROVE: Evolutionary Operation
- Design for Six Sigma Overview